ENVIRONMENTALLY COMPATIBLE HYDROCARBON BLEND DRILLING FLUID

A method of formulating and the resulting biodegradable wellbore fluid includes a first synthetic internal olefin having from 16 to 18 carbon atoms (C_{16-18} IO), a second synthetic internal olefin having between 15 to 18 carbon atoms (C_{15-18} IO), and a third synthetic internal olefin having 15 to 16 carbon atoms (C_{15-16} IO).The components of the wellbore fluid are blended such that the desired characteristics of polycyclic aromatic hydrocarbon content, toxicity and biodegrability are balance to achieve compliance with environmental requirements for hydrocarbon based drilling fluids. One such illustrative embodiment achieves this result by utilizing a formulation in which the first internal olefin is present in a range of about 45 to about 55 percent by weight of the wellbore fluid and wherein the second internal olefin is present in range of about 20 to about 30 percent by weight of the wellbore fluid and wherein the third olefin is present in range of about 20 to about 30 percent by weight of the wellbore fluid. Optionally, the illustrative fluid can include a C_{16} alpha olefin (C_{16} AO). In such instances, the C_{16} alpha olefin (C_{16} AO) is present in the range of about 10 to about 20 percent by weight of the wellbore fluid.